

# NT Chapter 12 12.1 (Skills Upgrading Corner)

$$\begin{aligned} 1a) \quad \frac{1}{4} &= \frac{1}{12} \\ &= \frac{1}{4} \times 12 : \frac{1}{12} \times 12 \\ &= 3:1 \end{aligned}$$

$$\begin{aligned} b) \quad 3 &: \frac{3}{8} \\ &= 3 \div \frac{3}{8} \\ &= 3 \times \frac{8}{3} \\ &= 8:1 \end{aligned}$$

$$\begin{aligned} c) \quad 0.3 &: 0.04 \\ &= 0.3 \times 100 : 0.04 \times 100 \\ &= 30:4 \\ &= 15:2 \end{aligned}$$

$$\begin{aligned} d) \quad 2.4 &: 0.03 \\ &= 2.4 \times 100 : 0.03 \times 100 \\ &= 240:3 \\ &= 80:1 \end{aligned}$$

$$\begin{aligned} 2a) \quad \frac{1}{3} : x &= 2:3 \\ \frac{1}{3} \times \frac{1}{x} &= \frac{2}{3} \\ \frac{1}{3x} &= \frac{2}{3} \\ 3 &= 6x \\ x &= \frac{3}{6} = \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 2b) \quad 0.5 &= 6 = y = 9 \\ \frac{0.5}{6} &= \frac{y}{9} \\ 6y &= 4.5 \\ y &= \frac{4.5}{6} \\ y &= 0.75 \\ & \text{(or } y = \frac{3}{4} \text{)} \end{aligned}$$

$$\begin{aligned} 3) \quad &\text{Ratio of Mr. Wong's Salaries} \\ &\text{to Mr. Lee this month:} \\ &\text{Salary of Mr. Wong : Salary of Mr. Lee} \\ &500 \times 15 = 400 \times 20 \\ &= 7500 = 8000 \\ &= 15 : 16 \\ &\text{or } (15 \text{ to } 16) \end{aligned}$$

$$\begin{aligned} 4) \quad &\text{Let Mario has } x \text{ candies} \\ &\text{and Louis has } y \text{ candies} \\ &x + y = 20 \\ &y = 20 - x \end{aligned}$$

$$\begin{aligned} &\text{after Mario give } \frac{1}{3}x \text{ to Louis} \\ &\text{the ratio is } 2 \text{ to } 3 \\ &\text{i.e. Mario get } 20 \times \frac{2}{5} \\ &= 8 \text{ candies} \\ &\text{therefore Louis get } = 20 - 8 = 12 \end{aligned}$$

$$\begin{aligned} &\text{After Mario give } \frac{1}{3}x \text{ to Louis} \\ &\text{he has } 8 \text{ which is } \frac{2}{3}x \\ &\frac{2}{3}x = 8 \\ &x = \frac{8 \times 3}{2} = 12 \end{aligned}$$

$\therefore$  Mario got 12 candies before